

USSR

BELEVITSKAYA, Ye. S., Veterinariya, No 6, Jan 1972, pp 123-124

Theoretical Bases, Methods, and Means of Diagnosis, Prophylaxis, Therapy and the Elimination of Fowl Diseases."

He reported that the following results were achieved in the basic fields of endeavor. Some characteristics of the regional epizootiology of Newcastle disease, infectious laryngotracheitis, bronchitis, encephalomyelitis, leukosis, Marek's disease, respiratory mycoplasmosis, pasteurellosis, pullorum disease, and coccidiosis of poultry were studied.

Methods were developed for obtaining standard erythrocyte diagnostics for the indirect hemagglutination reaction in Newcastle disease and influenza in poultry, and the complement fixation reaction and indirect hemagglutination reaction in infectious bronchitis. Methods of using AEV (antierythroblastosis virus) preparation for diagnosis of avian leukosis and the indirect hemagglutination reaction and bioassay on chicks and chick embryos for diagnosis of Marek's disease were also mentioned. The method of preparation, control and application of antigens for diagnosis of pullorum-typhoid was discussed, and methods of preparation of fluorescent Newcastle disease and avian influenza antisera have been unified.

2/4

- 46 -

USSR

BELEVITSKAYA, Ye. S., Veterinariya, No 6, Jan 1972, pp 123-124

Seven new coccidiostatic preparations, three of which were submitted to the chemical industry for production, were synthesized and have passed laboratory and industrial tests.

The following titles were approved by the Main Veterinary Administration USSR Ministry of Agriculture: "Instruction Book for Combatting Infectious Bronchitis," "Provisional Instructions for Combatting Marek's Disease With an Appendix of Instruction for Diagnosis of the Disease," "A Handbook on the Use of Antigens for the Diagnosis of Avian Mycoplasmosis in the Serum-Drop Agglutination Reaction."

Shortcomings in work and coordination of research were noted.

The report under review was discussed by I. N. Doroshko (Ukrainian Scientific Research Institute of Poultry Breeding), B. F. Bessarabov (Moscow Veterinary Academy), V. P. Golubnichiy (Belorussian Scientific Research Veterinary Institute), A. B. Baydevlyatov (Ukrainian Scientific Research Institute of Poultry Breeding), Comrade Vorob'yev (Northern Caucasus Scientific Research Veterinary Institute), I. G. Skutar' (Moldavian Scientific Research Institute

3/4

USSR

BELEVITSKAYA, Ye. S., Veterinariya, No 6, Jan 197, pp 123-124

of Livestock Breeding and Veterinary Science), V. P. Zelenskiy (All Union Scientific Research Institute of Fowl Diseases), A. V. Kachakhidze (Georgian Zooveterinary Educational and Research Institute), R. A. Zubtsova (State Scientific Control Institute of Veterinary Preparations), M. A. Zhurnakova (All Union Scientific Research Institute of Fowl Diseases), V. M. Alenko (Pyatigorsk Inter-Oblast Laboratory for Combatting Poultry Diseases), V. V. German (UNIEV), and V. N. Syurin -- in charge of the area under consideration (Moscow Veterinary Academy).

Participants in the discussions noted that much scientific research has been conducted on the problem under consideration, and some of the recommendations could be introduced into wide practice. They pointed out shortcomings, they gave some more precise definitions and expressed their thoughts on furthering the state-of-the-art in scientific research.

In sectional sessions, problems of viral infections, leukosis, mycoplasmosis, tuberculosis, pasteurellosis, pullorum disease, and protozoan diseases were considered.

4/4

USSR

UDC: 681.32.001

BELEVTSSEV A. T., BESSHAPOSHNIKOV, Ye. A., YEFIMOV, V. P., MUZALEV, Ye. Yu.,  
SEменов, B. A., CHIZHIK, S. P.

"Resistive Element for a Potentiometer"

USSR Author's Certificate No 293271, filed 1 Aug 69, published 11 Mar 71  
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct  
71, Abstract No 10B148 P)

Translation: This Author's Certificate introduces a resistance element for  
a potentiometer. The element is made in the form of two layers applied in  
sequence, one of them being a layer of rhodium. For the purpose of thermal  
stabilization of the resistance, the element utilizes a heat-treated chromium  
film as the rhodium sublayer. One illustration.

1/1

- 2 -

1/2 034

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--THERMAL CYCLIZATION OF PHOSPHORUS CONTAINING HOMO AND MIXED  
AROMATIC POLYAMIC ACIDS STUDIED FROM INFRARED ABSORPTION SPECTRA -U-  
AUTHOR--(04)-KOLESHNIKOV, G.S., FEDOTOVA, O.YA., PARESISHVILI, O.I.,  
BELEVSKIY, S.F.

COUNTRY OF INFO--USSR

SOURCE--VVSOKOMOL SOEDIN., SER. A 1970, 12(2), 317-22

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CYCLIZATION, ORGANIC PHOSPHORUS COMPOUND, IR SPECTRUM,  
PYROMELLITIC ACID, THERMAL EFFECT, ACTIVATION ENERGY, IMIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1223

STEP NO--UR/0459/70/012/002/0317/0322

CIRC ACCESSION NO--AP0116685

UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116685

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE KINETICS OF THERMAL CYCLIZATION OF P CONTG. AROMATIC POLYAMIC ACIDS (G. S. KOLESNIKOV ET AL., 1968) INTO THE CORRESPONDING POLYIMIDES AND THE CYCLIZATION OF POLY(PYROMELLITAMIC ACID) INTO POLY(PYROMELLITIMIDE) WERE STUDIED BY SPECTROSCOPY AT 1380-780 CM PRIME NEGATIVE. THE POLYAMIC ACIDS CYCLIZED SLOWLY AT 110-20DEGREES, BUT RAPIDLY AT HIGH TEMPS. IMIDIZATION FOLLOWED 1ST ORDER KINETICS, CHARACTERIZED BY A RATE CONST. WHICH WAS UNCHANGED UP TO A CERTAIN DEGREE OF CYCLIZATION BUT WHICH RAPIDLY DECREASED THEREAFTER WITH INCREASING TEMP. A DECREASE IN THE C-C-N ANGLE CAUSED AN INCREASE IN THE APPARENT ACTIVATION ENERGY.

FACILITY: MOSK. KHIM.-TEKHNOL. INST. IM. MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 541.15

BUGAYENKO, L. T., ZADOR, E., BELEVSKIY, V. N., GOLUBEV, V. B.,  
Moscow State University imeni M. V. Lomonosov, Moscow, Ministry of  
Higher and Secondary Specialized Education RSFSR

"Isotope Effect in Radiolysis of Frozen Aqueous Solutions of Acids"

Moscow, Khimiya Vysokikh Energiy, Vol 4, No 5, Sep-Oct 70, pp 468-  
469

Abstract: The article describes results of a study of the isotopic enrichment of atomic hydrogen in frozen solutions of perchloric (2.4 M) and sulfuric (3.9 M) acids. Within the accuracy limits of relative EPR measurements (20 percent) the isotopic enrichment factor is practically constant over the entire investigated range of isotopic composition and equals  $2.0 \pm 0.4$ , which is considerably lower than in liquid solutions.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--FORMATION OF MAGNESIUM SUPEROXIDE MG(O SUB2) SUB2 DURING THE  
REACTION OF MAGNESIUM PEROXIDE WITH OZONE -U-  
AUTHOR-(04)-VOLNOV, I.I., TOKAREVA, S.A., BELEVSKIY, V.N., LATYSHEVA,  
YE.I.  
COUNTRY OF INFO--USSR  
SOURCE--IZV AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 513-16  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--MAGNESIUM OXIDE, PEROXIDE, OZONE, LOW TEMPERATURE EFFECT, EPR  
SPECTRUM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAHE--2000/1549 STEP NO--UR/0062/70/000/003/0513/0516  
CIRC ACCESSION NO--AP0125175  
UNCLASSIFIED



2/2 023

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125175

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MG PEROXIDES, PREPD. FROM MG(OH) SUB2 AND H SUB2 O SUB2 CONTG. SIMILAR TO 39PERCENT MGO SUB2, WERE OZONIZED IN SUSPENSION IN FREGN-12 AT MINUS 100DEGREES. THE SOLN. TURNED BLUE WHEN O SUB3-O SUB2 WAS INTRODUCED; ADDN. OF THE MGO SUB2 SPECIMENT AT MINUS 100DEGREES FOLLOWED BY 1 HR HOLD AND WARMING TO MINUS 85DEGREES TO MINUS 65DEGREES, WHICH WAS THE OPTIMUM INTERVAL, RESULTED, AFTER MECH. TRANSFER OF THE SOLID PRODUCT, IN ISOLATION OF RATHER UNSTABLE (AT ROOM TEMP.) OZONIATION PRODUCTS. THESE CONTAINED SMALLER THAN OR EQUAL TO 60PERCENT MG(O SUB2) SUB2. THE INDIVIDUALITY OF THIS COMPN. WAS CONFIRMED BY EPR SPECTRUM. THERMAL ANAL. SHOWED THAT THE COMPD. IS STABLE UP TO ABOUT MINUS 29DEGREES TO MINUS 35DEGREES. FACILITY: INST. OBSHCH. NEORG. KHIM. IM. KURNAKOVA, MOSCOW, USSR.

UNCLASSIFIED

Thin Films

USSR

UDC 539.216.2

BELEVSKIY, V. P., BELOUS, M. V., PERMYAKOV, V. G., YASHNIK, V. M., Kiev Polytechnic Institute imeni V. I. Lenin

"Electrophysical Properties and Phase Composition of Tantalum Thin Films Made by Cathode Sputtering"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 3, Mar 72, pp 564-570

Abstract: It is shown that thin films of tantalum made by cathode sputtering in argon may consist of crystals of  $\alpha$ -Ta,  $\beta$ -Ta, or a mixture of the two, depending on the conditions of condensate formation. The electrophysical properties and structures of tantalum  $\alpha$ - and  $\beta$ -phases are investigated. The resistivity of the  $\beta$ -modification of tantalum was found to be 160-190  $\mu\Omega\cdot\text{cm}$ , and the temperature coefficient of resistance --  $200\cdot 10^{-6} \text{ deg}^{-1}$  in 200 nm and 20 nm films. A  $\beta \rightarrow \alpha$  phase transformation takes place at 700-750°C in a vacuum of the order of  $10^{-6}$ - $10^{-5}$  mm Hg, accompanied by an appreciable change in the electrophysical properties of the films. In the case of very thin films (20 nm) interaction with residual gases lowers the  $\beta \rightarrow \alpha$  transformation temperature to 600-650°C.

1/1

1/2 038 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--FABRICATION OF OHMIC CONTACTS TO GAAS IN HIGH VACUUM -U-  
AUTHOR-(03)-BELEVSKIY, V.P., IVANOV, V.N., LASHNIK, V.M.  
COUNTRY OF INFO--USSR **B**  
SOURCE--PRIORY I TEKHNIKA EKSPERIMENTA, JAN.-FEB. 1970, P. 225-227  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--METAL VAPOR DEPOSITION, GALLIUM ARSENIDE SEMICONDUCTOR,  
ELECTRON BOMBARDMENT, CRYSTAL SURFACE, RESISTIVITY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1988/1547 STEP NO--UR/0120/70/000/000/0225/0227  
CIRC ACCESSION NO--AP0106293  
UNCLASSIFIED

272

038

UNCLASSIFIED

PROCESSING DATE--230CT79

CIRC ACCESSION NO--AP0106293

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF EQUIPMENT FOR DEPOSITION OF METALLIC CONTACTS ON P OR N TYPE GASS SURFACES USING THE METHOD OF VACUUM EVAPORATION BY ELECTRON BOMBARDMENT. THE SAMPLE IS INITIALLY PURIFIED BY AN ARGON GLOW DISCHARGE, AND VAPOR DEPOSITION IS THEN CONDUCTED ON THE HEATED SEMICONDUCTOR SURFACE. THE PROCEDURE REDUCES THE WORKING TEMPERATURES TO A RANGE BETWEEN 300 AND 500 DEG C, AND IT IS POSSIBLE TO OBTAIN LOW RESISTANCE CONTACTS TO SAMPLES WITH IMPURITY CONCENTRATIONS OF  $10$  TO THE  $13$ TH POWER PER CU CM.

UNCLASSIFIED

AA0044627

BELEVTSSEV

A. T.

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Berwent,

2/70

243679 METHOD OF MEASURING THE RESISTANCE OF THERMO-ELECTRIC SYSTEMS by separating the ohmic component from the Peltier e.m.f. To enable the resistance to be measured through a wide temperature interval, an even junction temperature is obtained by passing a d.c. current through the system for those junctions a temperature gradient for heating-up has been set.

2.8.67 as 1177260/26-25.A.T.BELEVTSSEV et al.(26.9.69)  
Bul 17/14.5.69. Class 21b, 21e.Int.Cl.H 01m,G 01r.

AUTHORS: Belevtsev, A. T.; Koval'skiy, R. V.; Yakhats, M. S.

4 JC

19771313

1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--KINETICS OF ION EXCHANGE ON POLYSTYRENE TYPE SULFONIC CATION  
EXCHANGERS CROSSLINKED WITH M AND P-DIVINYLBENZENE -U-  
AUTHOR-(04)-BELFER, S.I., SALDADZE, K.M., GINTSBERG, E.G., KOVARSKAYA,  
B.M.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. FIZ. KHIM. 1970, 44(4), 1104-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--POLYMERIZATION, STYRENE, BUTADIENE, BENZENE, SULFONATION, ION  
EXCHANGE RESIN, CHEMICAL KINETICS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3007/0791 STEP NO--UR/0076/70/044/004/1104/1105  
CIRC ACCESSION NO--AP0136225

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136225

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COPOLYM. OF STYRENE WITH M-DIVINYLBENZENE (I) OR P-DIVINYLBENZENE (II) IN THE PRESENCE OF BZ SUB2 O SUB2, FOLLOWED BY SULFONATION GAVE ION EXCHANGE RESINS. THE POLAROGRAPHIC STUDY OF THE ION EXCHANGE RATES OF BU SUB4 N PRIME POSITIVE WITH H PRIME POSITIVE SHOWED THAT THE RESIN BASED ON I EXCHANGED THIS BULKY ION (RADIUS 12.2 A) FASTER THAN THE RESIN BASED ON II. THE DIFFUSION COEFFS. FOR THESE 2 RESINS WERE RESP. 3.8 TIMES 10 PRIME NEGATIVE8 AND 1.7 TIMES 10 PRIME NEGATIVE8 CM PRIME2 -SEC WHEN 6 MOLE PERCENT OF I OR II WERE PRESENT IN THE COPOLYMER. THE ION EXCHANGE CAPACITIES WERE NEARLY THE SAME: 4.82 AND 4.84 MEQ-G. FACILITY: NAUCH.-ISSLED. INST. PLASTMASS, MOSCOW, USSR.

AT0033418

USSR

NAPETVARIDZE, SH. G., BELGORODSKAYA, G. N., ABDURAUFOV, KH. SH., Institute  
of Earthquakeproof Construction and Seismology, Academy of Sciences of the  
Tadzhik SSR

"Elementary Band Method in Solving Earthquakeproof Dam Design Problems"

Dushanbe, Doklady Akademii Nauk Tadzhikskoy SSR, Vol 12, No 4, pp 71-76

Abstract: The authors present a method for determining the seismic stability and dynamic rigidity of dams. Using the cross section of a dam, it is divided into  $n$  uniformly thick horizontal layers, resulting in a system with  $n$  degrees of freedom. The maximum number of horizontal layers  $n$  is conditioned both by the dimensions of the dam and the program which can be realized by the computer. In this case  $n \leq 10$ . The mass, horizontal shift, and rigidity are calculated for each layer. Earthquake accelograms are used as the dynamic disturbance for the given system. Relative horizontal shifts are calculated and are used

19701912



AT0033418

for determining individual displacement. An expression is derived for determining the fundamental tone period of a dam. The BESM-2 and Minsk-22 computers are used in computing data for the Nurekskaya and Rogunskaya hydroelectric stations. Results of these calculations show that applicable engineering results can be obtained without using more than 10 finite elements.

2/2  
19701913

B

Construction

USSR

UDC 627.814(575.3)

NAPETVARIDZE, SH. G., BELGORODSKAYA, G. N., ABDURAUFOV, KH. SH., Institute of Earthquakeproof Construction and Seismology, Academy of Sciences of the Tadzhik SSR

"Elementary Band Method in Solving Earthquakeproof Dam Design Problems"

Dushanbe, Doklady Akedemii Nauk Tadzhikskoy SSR, Vol 12, No 4, pp 71-76

Abstract: The authors present a method for determining the seismic stability and dynamic rigidity of dams. Using the cross section of a dam, it is divided into  $n$  uniformly thick horizontal layers, resulting in a system with  $n$  degrees of freedom. The maximum number of horizontal layers  $n$  is conditioned both by the dimensions of the dam and the program which can be realized by the computer. In this case  $n \leq 10$ . The mass, horizontal shift, and rigidity are calculated for each layer. Earthquake accelograms are used as the dynamic disturbance for the given system. Relative horizontal shifts are calculated and are used for determining individual displacement. An expression is derived for determining the fundamental tone period of a dam. The BESM-2 and Minsk-22 computers are used in computing data for the Nurekskaya and Rogunskaya hydroelectric stations. Results of these calculations show that applicable engineering results can be obtained without using more than 10 finite elements.

1/2 016 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--EFFECT OF UNITHIOL ON EMBITOL TOXICITY IN MICE OF DIFFERENT AGE  
GROUPS -U-  
AUTHOR--BELGOVA, I.N. **B**  
COUNTRY OF INFO--USSR  
SOURCE--FARMAKOL. TOKSIKOL. (MOSCOW) 1970, 33(2), 216-19  
DATE PUBLISHED--70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--MOUSE, DRUG SENSITIVITY, ANTITUMOR DRUG EFFECT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1994/1181 STEP NO--UR/0390/70/033/002/0216/0219  
CIRC ACCESSION NO--AP0115200  
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115200

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EMBITOL ADMINISTERED I.P. TO ADULT AND 3-4 WEEK OLD MICE INDUCED CHRONIC SPASMS, DIARRHEA, WT. LOSS, AND DEATH AFTER 2-5 DAYS. SPASMS WERE NOT OBSD. IN NEWBORN MICE, AND DEATH OCCURRED AFTER 2-10 DAYS. UNITHIOL ADMINISTERED I.P. AT 200 MG-KG WAS INEFFECTIVE IN ADULT AND 3 WEEK OLD MICE, BUT AT 100 MG-KG IT PROTECTED NEWBORN MICE FROM EMBITOL TOXICITY. FACILITY LENIGRAD, PEDIAT. MED. INST., LENINGRAD, USSR.

UNCLASSIFIED

89

BELICH, R. B.

VERTICAL PROPAGATION OF DISTURBANCES IN THE LONG-RANGE RADIATION FIELD

UDC 551.521.32

Article by R. B. Belich, Central Aerological Observatory, Moscow, (Meteorologiya i Gidrometeorologiya, Kuzbass, No 3, 1972, submitted 16 June, 1971, pp 66-54)

On the basis of solving the system of linearized equations of hydrothermodynamics, a study was made of the characteristic features of vertical propagation of large-scale disturbances in the effective radiation field penetrated in the lower layers of the atmosphere to the upper layers. It was established that in the summer when radiation is transmitted by the higher layer, in the intervals of about 15 microns, radiation reaches the upper boundary of the atmosphere. In the winter the level of maximum radiation is not noted as a result of periodic propagation of disturbances to the upper layers.

1. State of the Art

The global field of outgoing thermal radiation of the Earth and atmosphere in individual spectral intervals obtained by means of artificial Earth satellites is, as the data indicate, nonuniform [4, 11]. According to [4], in the outgoing radiation field in the 8-12 micron range the characteristic features of the distribution of the continents and oceans, orographic inhomogeneities and inhomogeneities in localization of the cloud systems are reflected.

On the average global maps of outgoing radiation in the approximate 15 micron interval in the winter constructed in [12] by the artificial Earth satellite data, a region of heat over the Pacific Ocean is traced caused by the effect of the stratospheric Aleutian anticyclone formed as a result of joint effect of orography and baroclinic instability of the atmosphere [8, 10].

It is possible to assume that two factors -- the orography and the baroclinic instability of the atmosphere determining the nonuniform nature of the fields of meteorological parameters in the atmosphere -- are the basic tropospheric sources of the disturbances in the outgoing long-wave radiation field.

Doc 55899  
May 72

Acc. Nr: **AP0047223** **B**

Ref. Code: UR 0216

PRIMARY SOURCE: Izvestiya Akademii Nauk SSSR, Seriya  
Biologicheskaya, 1970, Nr 1, pp 87-92

Emanuel', N. M.; Dronova, L. M.;  
Yerokhin, V. N.; Belich, Ye. I.

INFLUENCE OF SOME ANTITUMOR SUBSTANCES  
OF A DEVELOPED SCHWÉZ ERYTHROMYELOSIS IN RATS

*Institute of Chemical Physics, Academy of Sciences, USSR*

Regressions of developed subcutaneous tumor in rats suffering from the Schwéz-erythromyelosis proceeds with the same speed when either eloxene (5 mg/kg) or sarcolysine (1 mg/kg) are injected on the 4<sup>th</sup>—7<sup>th</sup> day after inoculation. A correlation between the variation of the tumor diameter and the erythrocytes number in the blood was shown.

1/1  
REEL/FRA  
19790725

6/4 2

Acc. Nr.

AP0034213

Abstracting Service:

CHEMICAL ABST. 4-70

Ref. Code

UR 0028

B

74158r Copper salts of the semicarbazone and thiosemicarbazone of pyruvic acid. Ablov, A. V.; Belichuk, N. L.; Chapurina, L. F. (Inst. Khim., Kishinev, USSR). *Zh. Neorg. Khim.* 1970, 15(1), 112-18 (Russ). Cryst.  $\text{CuXL} \cdot n\text{H}_2\text{O}$  pptd. when pyruvic acid semicarbazone (HL) was added to  $\text{CuX}_2$  soln., where X = Cl or Br. Pyruvic acid thiosemicarbazone ( $\text{H}_2\text{L}'$ ) forms 3 kinds of complexes with Cu:  $\text{CuX}(\text{HL}')$ ,  $\text{Cu}(\text{HL}')_2$ , and  $\text{CuL}'$ .  $\text{H}_2\text{L}'$  and HL behave as tridentate ligands. HMJR

7

1

REEL/FRAHE

di

19710866

USSR

UDC 66.045.1

RIFERT, V. G., PUKHOVOY, I. I., and BELIK, D. M.

"On Intensifying Heat Exchange in Surface Evaporators of Sea Water"

Kiev, Vestn. Kievsk. Politekhn. in-ta. Ser. teploenerg (Journal of the Kiev Polytechnical Institute, Series on Thermal Energy) No 7, 1970, pp 61-64  
(Summary in English) (from Referativnyy Zhurnal - Thermal Power, No 5, May 71, Abstract No 5S 183.

Translation: A significant intensification of heat exchange in surface sea water evaporators is attained by using corrugated and rotating heat exchange surfaces. In this case it is possible to obtain a thin film of both the condensed warmed vapor and the evaporating fluid, as a result of which the over all coefficient of heat transfer is 5 - 10 times higher than that in evaporators with a submerged heating surface. Data on the condensation of steam on corrugated and rotating surfaces are extremely limited and contradictory, and on the boiling of liquid on such surfaces no data are available. The authors experiments in condensing steam on a rotating disk 300 millimeters in diameter showed that the coefficient of heat emission when steam condensed on a rotating surface was 3 - 5 times higher than for a smooth stationary surface. Results are also given from the study of heat transfer in the evaporation of water and a NaCl solution at a concentration of  $38 \cdot 10^3$  milligrams per litre as a function of the rate of disk rotation over  
1/2



USSR

RIFERT, V. G., et al., Kiev, Referativnyy Zhurnal - Thermal Power, No 5, May 71,  
Abstract No 5S 183

the interval from 100 to 1900 rpm. The coefficients of heat emission obtained are on the order of  $(15 - 25) \cdot 10^3$  watts per square meter degree, with the coefficient of heat transfer for the NaCl solution only 6 - 10% lower than that for pure water. Two illustrations, seven bibliography entries.

USSR

NOVOTOROV, A. S., KRUGLITSKIY, N. N., TRETINNIK, V. Yu., PARKHOMENKO, V. V.,  
BELIK, F. A.

"Determination of the Specific Surface of Humates by the Gas-Chromatographic Method"

Khim. Tekhnologiya. Nauch.-proyizv. sb. [Chemical Technology. Scientific and Production Collection], No 2(56), 1971, pp 44-46 (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3 B1495).

Translation: A gas chromatic installation for determination of the surfaces of solids, mounted on a type LKhM-8M chromatograph, is used to study the adsorption of humic acids and humates of nitrogen and argon. The adsorption measurements are used to calculate the specific surfaces of the humic acids and humates.

1/1

Acc. Nr. **0036532**

Ref. Code: UR 0069

PRIMARY SOURCE: *Kolloidnyy Zhurnal*, 1970, Vol 32, Nr 1,  
PP 78-84

ADSORPTION OF HYDROCARBONS ON CLAY MINERALS

ADSORPTION OF HEXANE AND HEPTANE

E. D. Ovcharenko, F. A. Belik, Yu. I. Tarasevich

Summary

The adsorption of hexane and heptane vapors on clay minerals of different crystal structures: palygorskite, kaolinite and two samples of hydromica has been studied. The adsorption isotherms obey the BET equation in the range  $P/P_s = 0.05 \div 0.38$ . The changes in the differential thermodynamic functions during adsorption have been calculated. The adsorption sites on the surface of Kwasi hydromica are more homogeneous than on other samples. The differential adsorption heat of benzene on the surface of clay minerals studied is somewhat higher than for hexane.

D. n.

REEL / FRAME  
19721380

7

1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--USING CARBIDECHROMIUM ALLOYS FOR MAKING DIE CASTING MOLDS IN THE  
PRODUCTION OF BARIUM FERRITES -U-  
AUTHOR-(04)-BELIK, I.T., KLIMENKO, V.N., MASLYUK, V.A., RADUMYSELSKIY,  
I.D.  
COUNTRY OF INFO--USSR  
SOURCE--KIEV, TEKHNLOGIYA I ORGANIZATSIYA PROIZVODSTVA, NO 1, 1970, PP  
86-87  
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--DIE CASTING, BARIUM FERRITE, ANISOTROPY, CHROMIUM ALLOY,  
CARBIDE, MOLD MATERIAL, FOUNDRY CORE/(U)KKH15 CHROMIUM CARBIDE ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1999/1339

STEP NO--UR/0418/70/000/001/0086/0087

CIRC ACCESSION NO--AP0123297

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123297

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TECHNOLOGICAL REGIMES ARE DEVELOPED FOR SINTERING AND MOLDING LARGE DIES AND CORES OF DIE CASTING MOLDS MADE FROM KKHN-15 ALLOY FOR MAKING ANISOTROPIC BARIUM FERRITES. THE STABILITY OF DIE CASTING MOLDS EQUIPPED WITH FEMALE DIES MADE FROM KKHN-15 CARBIDECHROMIUM ALLOY IS 40-50 TIMES HIGHER THAN FOR MOLDS MADE FROM STEEL.

UNCLASSIFIED

Automotive and Transportation

USSR

UDC: 534.11:681.31+625.2:62-592.5

LAZARYAN, V. A., BLOKHIN, Ye. P., BELIK, L. V., Dnepropetrovsk

"Longitudinal Oscillations of Nonlinear One-Dimensional Systems with Perturbations Propagating along the Length"

Kiev, Prikladnaya Mekhanika, Vol 9, No 6, Jun 73, pp 89-94.

Abstract: A system of solids connected by deformable elements into a one-dimensional chain is studied. Perturbations propagate at constant velocity along the length of the chain. The dependence between force and deformations of connecting elements is assumed ambiguous; therefore, additional conditions must be set. A numerical solution of the problem is performed as applicable to braking of railroad trains. A computer is used to study the transient process as a function of the initial state of the system, the number of masses, and the clearances in the connecting elements. Comparison with experimental studies shows that the mathematical model reflects the processes occurring under actual conditions with sufficient accuracy.

1/1

USSR

UDC: 536.2

PETROV, V. A., PETROVA, I. I., NESHPOR, V. S., FRIDLENDER, B. A., KAPRALOV, V. K., BELIK, R. V., Institute of High Temperatures of the Academy of Sciences of the USSR, State Institute of Applied Chemistry

"Some Thermophysical Properties of Isotropic Pyrolytic Graphite"

Moscow, Teplofizika Vysokikh Temperatur, Vol 11, No 2, Mar/Apr 73, pp 308-313

Abstract: A study is done on the electrical resistance, thermal conductivity and radiative characteristics of pyrolytic graphite which lacks a preferred orientation of the crystallographic planes with respect to the deposition surface. The measurements were made on specimens with densities ranging from 1.76 to 2.19 g/cc over a wide temperature interval. The behavior of the properties as a function of density and temperature is explained in terms of peculiarities of the defect structure of isotropic pyrographite.

1/1

BELIK, V. N.

Microelectronics

MICROELECTRONICS

JPRS 57333  
25 October 1972

Excerpts from Russian-language book edited by P. V. Lukin:  
Mikroelektronika, No 5, 1972, Sovetskoye Radio Publishing House,  
Moscow, UDC 621.382:621.396.6-181.5.

CONTENTS PAGE

Announcement.....	1
Obituary of Fedor Viktorovich Lukin.....	2
Foreword.....	3
Abstracts.....	5

[I - USSR - 2]



USSR

UDC 539.23

SVIRSKIY, L. D., BELIK, Ya. G., KROKHIN, V. P., and GORDIYENKO, Ya. I.,  
Khar'kov

"Spraying NiO With Argon Plasma"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 71, pp 56-59

Abstract: The possibility of producing layers of NiO by spraying it with argon plasma was experimentally investigated. According to thermodynamic calculation data, bunsenite (NiO) can be reduced to metallic Ni by heating over 2460 °C in an argon plasma jet. X-ray structural analysis of sprayed layers revealed the presence of NiO and ~10 wt % metallic Ni. By petrographic investigation of the composition and structure of sphere-like drops originated by spraying and forming the layer, the concentration tendency of Ni and the relative grouping of NiO and metallic Ni on the surface layer could be established. The mutual contacting of NiO and metallic Ni in the volume of sphere-like drops is explained with the help of rapid motion-picture filming of the spraying process. Three illustr., seven biblio. refs.

1/1

- 2 -

USSR

UDC 577.1:612.8.015.547.96

PALLADIN, A. V., BELIK, YA. V., and POLYAKOVA, N. M.

Belki golovno go mozga i ikh obmen (Protein Metabolism in the Brain), Kiev, 1972, 316 pp

Translation:

Annotation

The book reviews the literature and the results of the authors' studies on protein metabolism in different divisions of the central nervous system in different functional states of the body. It examines the role in the blood-brain barrier in membrane transport of amino acids and in the formation of amino acid reserves in brain tissues. The book briefly considers the main stages and principal directions of research on protein metabolism in the central and peripheral nervous systems. It also describes the most important morphological, functional, and biochemical characteristics of nervous tissue responsible for the specific nature of the metabolic processes therein.

The book is intended for biochemists, physiologists, specialists in age-related biology, and physicians. It can be used by graduate students and by students taking advanced courses in the aforementioned specialties.

Contents

Foreword...

Introduction...

1/4

3

5

USSR

PALLADIN, A. V., et al., Belki golovnogo mozga i ikh obmen, 1972, 316 pp

Chapter 1. Main stages and principal directions of research on protein metabolism in the nervous system...	8
Chapter 2. Fractionation of nervous tissue proteins. Physicochemical and biological properties of some protein fractions	14
First stages in the study of nervous tissue proteins...	14
Electrophoretic study of the soluble protein fractions in nervous tissue...	19
Fractionation of proteins extracted from subcellular structures of brain tissue by means of detergents...	27
Separation of the main nervous tissue proteins...	34
Separation of nervous tissue acid proteins...	42
Chapter 3. Blood-brain barrier and transport of amino acids across cellular membranes...	55
Basic information about the blood-brain barrier...	56
Blood-brain barrier and reserve of free amino acids in brain tissue..	65
Investigation of transport of amino acids across cellular membranes..	78
Mechanisms of biological transport of amino acids across cellular membranes...	87
Chapter 4. Some morphological, functional, and biochemical characteristics of nervous tissue...	93

BELIK, Ya. Ya.

Cybernetics

GLORIA

SO: JPRS 55937  
9 May 1972

PROBLEM OF MODELLING PERCEPTION OF DISTANCE FROM VISIBLE BRIGHTNESS OF LANDMARKS  
[Article by Ya. Ya. Belik, Kiev, Akustika i Tekhnicheskaya Tekhnika,  
Russian, No. 7, 1970, pp. 20-28]

In the control of moving "man-machine" systems, the operator's perception of distance is realized from the following signs: the visible size of the landmark, the gradient of its visible size, as well as the visible speed and the visible brightness of the landmark, binocular and monocular parallaxes, etc. [1].

The perception of distance from these signs can be mathematically modeled.

Let us consider the mathematical models of the perception of distance under flight conditions from the visible brightness of a luminous surface.

The nature of the landmarks is unimportant. They can be reflectors or radiators.

The first includes all landmarks from whose surfaces electromagnetic waves in the visible portion of the spectrum are reflected. They become visible when the luminosity exceeds some threshold value.

Landmarks of the second type themselves radiate electromagnetic waves and become natural landmarks for the operator (and not for just any type of technical receiver) when the surface flux of visible light radiation also exceeds some threshold value.

Although the second type of landmark is much smaller, its importance in distance perception is no less than that of the first type. The reason is that under flight conditions, visual perception of distance is principally obtained through landmarks of the second type.

USSR

UDC: 6.74

BELIK, Ya. Ya.

"On the Problem of Models of Visual Perception"

Probl. bioniki. Resp. mezhd. temat. nauch.-tekhn. sb. (Problems of Bionics. Republic Interdepartmental Thematic Scientific and Technical Collection), 1971, vyp. 6, pp 16-20 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V1111)

Translation: Mathematical models are proposed for perception of the distance of objects from the surface of the earth based on the mechanisms of convergence, accommodation and monocular parallax. The theoretical calculations based on the models are confirmed by experimental data. Author's abstract.

1/1

Acc. Nr.:

AP0047041

Ref. Code: UR0122

USSR

UDC 621.787.4-181.2

CHERNENKO, N. T., Engineer, BELKIN, M. YA., Candidate of Technical Sciences and SLYUSARENKO, V. N., Engineer

"Strengthening of Large-Scale Machine Components by Surface Hardening" (Experience of the Staro-Kramatorsk Machine Tool Plant imeni Ordshonikidze)

Moscow, Vestnik Mashinostroyeniya, No 1, 1970, pp 42-44

Abstract: Investigations on the efficiency of surface hardening of large scale machine components, and on the effect of scale factor for a wide variety of parts made of carbon and alloy steels, are described. They were conducted jointly by the Staro-Kramatorsk Machine Tool Plant and the Central Scientific Research Institute of Technology and Mechanical Engineering. The Techniques of hardening by rolling used for each type of components are presented. The efficiency of strengthening the machine components with chamfers, press fits, key ways etc, and components

Reel/Frame

19790480

18

AP0047041

subjected to alternating loads was substantiated by the results of tests, which are presented in tables, in the form of the endurance limit and the effective coefficient of stress concentrations. It is stated that the examples of the application of strengthening technology presented here give an idea of the incorporation of this progressive technology at the plant, while investigations are conducted, at present time, for substituting the hardening of large scale machine components by cold plastic deformations for the laborious thermal hardening. Original article has 2 tables.

2/2

87

19790481

USSR

UDC: 533.9.07

BELIKOV, A. G., GONCHARENKO, V. P., GONCHARENKO, D. K., DEREPOVSKIY, N. T.,  
SAFRONOV, B. G., KHIZHNYAK, N. A.

"Energy Characteristics of a Coaxial Plasma Source"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 41, No 9, Sep 71, pp 1881-1886

Abstract: Some considerations are presented on selecting the parameters of a coaxial plasma source. On the basis of this preliminary theoretical study, a plasma source is determined and its energy characteristics are experimentally investigated. It is shown that plasmoid energy increases in proportion to the energy stored in the battery of the plasma source. The total plasmoid energy is greater than 1 kJ. It is shown that pure hydrogen plasmoids can be produced. Eight figures, bibliography of five titles.

1/1



1/2 026 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--THE PRESSURE CASTING OF ANTIFRICTION BEARING CAGES (EXPERIENCE OF  
THE FOURTH STATE BEARING PLANT) -U-  
AUTHOR--BELIKOV, S.A.  
COUNTRY OF INFO--USSR **B**  
SOURCE--MOSCOW, VESTNIK MASHINOSTROYENIYA, NO 3, 1970, PP 70-71  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--ANTIFRICTION BEARING, BEARING MANUFACTURING PLANT, MECHANICAL  
PROPERTY, FOUNDRY TECHNOLOGY, METAL CASTING, PRESSURE CASTING, HIGH  
STRENGTH ALLOY, ALLOY DESIGNATION/(U)DI HIGH STRENGTH ALLOY  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1994/1467 STEP NO--UR/0122/70/000/003/0070/0071  
CIRC ACCESSION NO--AP0115395  
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115395

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT THE FOURTH STATE BEARING PLANT, RESEARCH WAS CONDUCTED WITH REGARD OF THE POSSIBILITY OF PRODUCING ANTIFRICTION BEARING CAGES BY PRESSURE CASTING. THE MECHANICAL PROPERTIES OF CAST ALLOYS ARE SOMEWHAT INFERIOR TO THE PROPERTIES OF THE DEFORMED ALLOY D1, FROM WHICH CAGES ARE AT PRESENT BEING PRODUCED BY TURNING. MEASUREMENTS OF THE EXPERIMENTAL CAGES SHOWED THAT PRESSURE CASTING MAKES IT POSSIBLE TO OBTAIN CAGES OF THE REQUIRED PRECISION. CAST SEPARATORS DO NOT REQUIRE MACHINING, EXCEPT FOR THE DULLING OF SHARP EDGES. THE TECHNOLOGICAL CYCLE OF PRODUCTION OF THE CAGES IS MORE THAN FOUR TIMES SHORTER FOR THE CAST ONES, THE METAL IS USED MORE EFFICIENTLY, AND LABOR PRODUCTIVITY IS CONSIDERABLY INCREASED. FURTHER IMPROVEMENT OF THE QUALITY OF CAST CAGES MAY BE ATTAINED THROUGH IMPROVEMENT OF THE CASTING TECHNOLOGY, AND PLACING THE MOLD CAVITY UNDER VACUUM.

UNCLASSIFIED

Acc. Nr.:

AN0104033

Ref. Code: UR9030

AUTHOR-- BELIKOV, V., CORRESPONDENT

TITLE-- A SPEED BOAT ON THE SURA

NEWSPAPER-- NEDELYA, MAY 25-31, 1970, NR 22, P 4, COLS 1-2

ABSTRACT-- THE FIRST SOVIET WATER-JET PROPELLED AIR-CUSHION CRAFT, CAPABLE OF DOING 35 KMS PER HOUR, ITS HULL AND ALL OF ITS MACHINERY, WAS MADE BY THE TRAINING PILOT PLANT OF THE GOR, KIY INSTITUTE FOR WATER TRANSPORT ENGINEERS. THE WORKING BLUE PRINTS OF THE GOR, KOVCHANIN WERE PRODUCED BY THE "VOLGOBALTSUDOPROYEKT", AND ITS CHIEF DESIGNER WAS V. ZOROASTROV. THE PROPOSAL TO CONSTRUCT THE "GOR, KOVCHANIN" WAS SUBMITTED FIVE YEARS AGO. PRIOR TO THAT SEVERAL WORKING MODELS WERE CREATED AT THE GOR, KIY INSTITUTE FOR TRANSPORTATION ENGINEERS UNDER THE DIRECTION OF PROFESSOR V. ANDRYUTIN. V. ZOROASTROV, GRADUATE STUDENT AT THAT TIME, PARTICIPATED IN THE DEVELOPMENT PROGRAM. THE 9-METER AIR FAN OF THE CRAFT HAS BEEN DESIGNED BY THE STUDENT DESIGN BUREAU OF THE INSTITUTE.

1/2

REEL/FRA  
19870386

4

Acc. Nr.: AN0104033

IN ITS TRIALS, THE "GOR, KOVCHANIN" WAS ABLE TO NAVIGATE RAPIDS LESS THAN HALF A METER DEEP AND TO LAND ON A BEACH WITHOUT ANY LANDING FACILITIES.

ANOTHER AIR CUSHION CRAFT, THE FIRST ONE IN THE SERIES KNOWN AS THE "ZARNITSA" IS BEING CURRENTLY EXHIBITED IN MOSCOW.

2/2

K2

REEL/FAME

19870387

USSR

UDC 681.327.4'18

AKININ, Ye. Ya., EPSHTEYN, V. R., and BELIKOV, V. I.

"Tape Drive for Punched Data Carrier"

USSR Author's Certificate No 262423, filed 25 Nov 68, published 29 Sep 70  
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6, Jun 71,  
Abstract No 6 B369 P)

Translation: This invention belongs to the area of magnetic data recording on a tape magnetic carrier: namely, to tape drive mechanisms for a punched carrier. In the known tape drives for a punched carrier, the basic element of which is the toothed transport drum, the channel is reloaded when rewinding the tape, passing the tape by this drum. Otherwise, heavy tension of the tape can occur, and deformation or breaking of it will take place. In the proposed tape drive mechanism for accelerated rewinding of the carrier in the case of direct contact of it with the toothed drum on the input shaft, friction discs are installed between the small halfcoupling and the large halfcoupling, on the axial part of which there is a cylindrical spring in contact with an intermediate disc coupled by means of a separating shaft to the toothed transport drum. The large coupling is connected to the core of a solenoid via an L-type arm. There are 2 illustrations.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--KINETICS AND MECHANISM OF MANNICH BASE DISSOCIATION IN AQUEOUS  
BUFFERS--U-  
AUTHOR--(04)--BELIKOV, V.M., BELOKON, YU.N., DOLGAYA, M.M., HARTINKOVA, N.S.  
COUNTRY OF INFO--USSR **B**  
SOURCE--TETRAHEDRON 1970, 26(5), 1199-216  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CHEMICAL REACTION KINETICS, CHEMICAL REACTION MECHANISM,  
CHEMICAL DECOMPOSITION, AMINE, ORGANIC NITRO COMPOUND, PROPANE, BUTANE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/1631 STEP NO--UK/0000/70/026/005/1199/1216  
CIRC ACCESSION NO--AP0125253

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125253

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RATES OF DECOMPN. IN WATER OF  
 1, (METHYLAMINO), 2, METHYL, 2, NITROPROPANE,  
 1, (DIMETHYLAMINO), 2, METHYL, 2, NITROPROPANE,  
 1, (DIETHYLAMINO), 2, METHYL, 2, NITROPROPANE,  
 1, (DIPROPYLAMINO), 2, METHYL, 2, NITROPROPANE,  
 1, (DIISOPROPYLAMINO), 2, METHYL, 2, NITROPROPANE,  
 1, (DIETHYLAMINO), 2, 2, DINITROPROPANE,  
 1, (DIMETHYLAMINO), 2, ETHYL, 2, NITROBUTANE,  
 1, (DIETHYLAMINO), 2, ETHYL, 2, NITROBUTANE,  
 PIPERIDINO, 2, METHYL, 2, NITROPROPANE AT DIFFERENT PH AND TEMPS. THE  
 PROPOSED REACTION MECHANISM INVOLVES UNIMOL. DISSOCN. OF AN UNPROTONATED  
 BASE AS THE RATE DETG. STEP WITH FORMATION OF IMMONIUM IONS AND  
 CARBANIONS. THE DISSOCN. RATES ARE GREATLY INFLUENCED BY THE SIZE BOTH  
 OF THE ALKYL SUBSTITUENTS AT THE AMINE N AND OF THE LEAVING GROUP. AN  
 EXCELLENT CORRELATION IS OBSERVED BETWEEN THESE RATES AND THE HYDROLYSIS  
 RATES OF 3,3, SUBSTITUTED MONO, P, BROMOPHENYL GLUTARATE ESTERS. THIS  
 FACT INDICATES THAT ALKYL GROUPS EXERT A PREDOMINANTLY STERIC EFFECT ON  
 THE REACTION VELOCITY. POSSIBLE MECHANISMS ARE DISCUSSED.  
 FACILITY: INST. ORG. ELEM. COMPD., MOSCOW, USSR.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE—30OCT70  
TITLE—KINETICS OF THE DECOMPOSITION OF AROMATIC NITRO ALCOHOLS IN AN  
ALKALINE MEDIUM —U—  
AUTHOR—(03)—LEYBZON, V.N., BELIKOV, V.M., KOZLOV, L.M.  
COUNTRY OF INFO—USSR  
SOURCE—IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 322-7  
DATE PUBLISHED—70  
SUBJECT AREAS—CHEMISTRY  
TOPIC TAGS—REACTION KINETICS, CHEMICAL DECOMPOSITION, ORGANIC NITRO  
COMPOUND, ALCOHOL, ACTIVATION ENERGY  
CONTROL MARKING—NO RESTRICTIONS  
DOCUMENT CLASS—UNCLASSIFIED  
PROXY REEL/FRAE—2000/0751 STEP NO—UR/0062/70/000/002/0322/0327  
CIRC ACCESSION NO—AP0124421  
UNCLASSIFIED



2/2 026

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124421

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC DATA, OBTAINED BY POLAROGRAPHY, ARE REPORTED FOR DECOMPN. OF 1,PHENYL,2,NITROETHANOL (I) AND ITS P,BROMO, P,METHYL AND M,NITRO ANALOGS. THE REACTIONS, IN VERGNAL BUFFER AT PH 7-9.5 WERE ACCOMPANIED BY REVERSIBLE IONIZATION OF THE C-H BOND ACTIVATED BY THE NO SUB2 GROUPS. THE RATE CONSTANTS (10 PRIME12 SEC NEGATIVE PRIME1) WERE: I, 3.15; P-BR, 4.15, P-ME, 3.9; M-NO SUB2, 4. THE ACTIVATION ENERGY WAS 19 KCAL-MOLE. THE SUBSTITUENTS HAVE LITTLE EFFECT ON THE KINETICS OF DECOMPN. FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

BELIKOV, V.S.

nuclear physics

FOR OFFICIAL USE ONLY

CENTRAL INTELLIGENCE AGENCY

CENTRAL REFERENCE SERVICE

Date: 7 SEP 1971

Holder of Receipt of Intelligence Document

The document cited below was received by Acquisition and Dissemination Division, CRR, in a single copy. This copy will be available on request to the Document Section, Room 1000 (Room 1001, Ext. 7177).

This document is considered pertinent to your interests.

Title: The Effect of Fusion Functions on the Operation of Thermobaric Devices. AEC-TR-7347

Author: V.S. Belikov

Prepared by: AEC

Country: USSR

Date of Document: 9 August 1971

Classification: UNCLASSIFIED

CIA Control Number: AEC/ /m-7247-71

Distribution:

-000/100A-

OSI/ISB

NT

DDO/DSB/Search - 2

ACQUISITION & DISSEMINATION DIVISION  
DISSEMINATION BRANCH  
COLLATERAL REPORTS SECTION

FOR OFFICIAL USE ONLY

USSR

UDC 621.762.2:669.3

BONDARENKO, A. V., and ~~BELIKOV, V. V.~~

"Regulation of Metal Concentration in a Solution During Powder Electro-crystallization"

Tr. Novocherk. politekhn. in-ta (Works of the Novocherkassk Polytechnical Institute), 1970, 208, pp 77-80 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11G333)

Translation: A flow chart is worked out for the regulation of Cu concentration in sulfuric acid electrolyte during electrolytic deposition of Cu powder. The presence of the range of allowable concentrations during production of powder and the static nature of the object (electrolyzer) allows utilization of a proportional regulator, which redistributes current between the soluble and insoluble anodes. The setup flow chart ensures a reliable reaction of the required direction onto input signals. 2 ill.

1/1

172 021 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--SEPARATION OF POWELLITE MOLYBDENUM FROM ISOMORPHOUS MOLYBDENUM  
CONTAINED IN SCHEELITE -U-  
AUTHOR--BELIKOV, V.V. **B**  
COUNTRY OF INFO--USSR  
SOURCE--U.S.S.R. 265,453  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--09MAR70  
SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--METAL SEPARATION, MOLYBDENUM, METALLURGIC PATENT, MINERAL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3003/1068 STEP NO--UR/0482/70/000/000/0000/0000  
CIRC ACCESSION NO--AA0130103

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--27NOV70  
CIRC ACCESSION NO--AA0130103  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SUSPENSION OF A MIXT. OF  
POWELLITE AND SCHEELITE IS TREATED WITH A SOLN. OF NA TUNGSTATE CONTG.  
100-50 G WO SUB3-L. WITH AN ADMIXT. OF 5 G NA SUB2 CO SUB3-L. AT  
200DEGREES FOR 2 HR. THE SOLN. OBTAINED IS FILTERED. FACILITY:  
SCIENTIFIC RESEARCH AND DESIGN INSTITUTE OF BENEFICATION AND MECHANICAL  
PROCESSING OF MINERALS.

UNCLASSIFIED

Acc. Nr: **AP0044690**

Ref. Code: UR 0463

PRIMARY SOURCE: Molekulyarnaya Biologiya, 1970, Vol 4, Nr 1,  
pp 30-36

B

THE INTERACTION OF TRANSFER RNA WITH ACETALS  
OF 4-(N-2-CHLOROETHYL-N-METHYLAMINO)-BENZALDEHYDES—  
DERIVATIVES OF URIDINE AND URIDINE-5'-METHYLPHOSPHATE

Belikova, A. M.; Vakhrusheva, T. Ye.; Vlasov, V. V.;  
Grineva, N. I.; Zarytova, V. F.; Knorre, D. G.; Teplova, N. M.

Institute of Organic Chemistry, Siberian Branch of the Academy of Sciences, USSR,  
Novosibirsk

It has been shown that the acetals of 4-(N-2-chloroethyl-N-methylamino)-benzaldehyde (RCI) — derivatives of uridine (URCI) and uridine-5'-methylphosphate (mepURCI) do alkylate tRNA. The efficiencies of the reagents are determined as a ratio of the velocity of tRNA modification to the velocity of all by-processes. The efficiencies of URCI and

1/2

REEL/FRA  
19771423

02

AP0044690

RCI are of the same order of magnitude and two orders greater, respectively, as compared with that of mepURCI. In the presence of *tris* the efficiency of URCI decreases significantly and that of mepURCI is altered only slightly. The efficiency of URCI decreases in the presence of mepU due to the interaction of an intermediate cation with primary phosphates of mepU. It suggests that the efficiency of mepURCI is low due to the presence of primary phosphate in its molecule. The quantitative analysis of the data obtained makes it possible to conclude that the interaction of mepUR<sup>+</sup> with phosphate is an intramolecular process.

2/2  
19771424  
L

1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--ELASTIC CONSTANTS OF DIPHENYL -U-  
AUTHOR--(03)-KRUPNYY, A.I., ALEKSANDROV, K.S., BELIKOVA, G.S. B  
COUNTRY OF INFO--USSR  
SOURCE--KRISTALLOGRAFIYA (USSR), VOL. 15, NO. 3, P. 589-90 (MAY 1970)  
DATE PUBLISHED----MAY70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ULTRASONIC VELOCITY, ELASTICITY, POLYNUCLEAR HYDROCARBON,  
BENZENE DERIVATIVE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----FD70/605029/F04 STEP NO--UR/0070/70/015/003/0589/0590  
CIRC ACCESSION NO--AP0141768  
UNCLASSIFIED



2/2 020

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0141768

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN IMPULSE ULTRASONIC METHOD IS USED TO MEASURE THE WAVE VELOCITIES IN APPROPRIATE DIRECTIONS IN DIPHENYL AND HENCE TO DERIVE THE 13 INDEPENDENT STIFFNESSES C SUBIJ AT NORMAL TEMPERATURE. INVERSION OF THE MATRIX OF THE C SUBIJ GIVES THE COMPLIANCES WHICH ARE ALSO TABULATED.

UNCLASSIFIED

BELIKOVA, L. S.

PHYSIOLOGIC AND HYGIENIC EVALUATION OF EXPERIMENTAL SANITARY  
OF COSMETICS

Article by V. V. Zhidkov, L. S. Belikova, V. F. Gerasimov,  
G. A. Shumilina, and G. N. Komarov. Abstracts of the 1st  
Congress of the USSR Academy of Sciences, Current Questions  
in Space Biology and Medicine, Moscow, 1971, pp 11-13.

The composition of the lotions L-210, L-211 and the  
elixirs E-320, E-321 was tested in two isolation chamber ex-  
periments lasting 22 and 30 days in which the atmosphere and  
microclimate were carefully controlled.

In the first experiment there were three groups of sub-  
jects, two in each group. Over a 10-day period the first group  
used L-210 lotion for care of the skin and the hairy part of  
the head; elixir E-320 was used for care of the oral cavity.  
Over a 20-day period the second group used L-211 lotion and  
E-321 elixir, whereas the third group performed all hygienic  
procedures using HWS-3 lotion.

In the second experiment, during the first 17 days the  
three subjects used L-210 lotion and E-320 elixir, on the  
next three days -- lotion HWS-3, and during the concluding  
10-day period -- L-211 lotion and E-321 elixir.

Shaving was with a safety razor and "Uspoln" shaving  
creams of the "Pigaro" and "Svoboda" types.

The schedule for using these items of personal hygiene  
was drawn up taking into account the restrictions characteris-  
tic for space flights with a duration from one to three  
months. The mean daily expenditure by one subject was 75 g of  
lotion, 7 g of elixir, and 10 g of shaving cream.

Over a five-month period we checked the possibility of  
long-term storage of L-211 lotion and E-321 elixir in rooms

SPRS 576.499  
14 JULY 72

LL

USSR

UDC 8.74

BELIKOVA, M. A., LYAPUNOV, A. A.

"Concerning Cybernetic Problems of Biology"

Novosibirsk, O nekotorykh vopr. kodir. i peredachi inform. v upr. sistemakh zhivoy prirody--sbornik (On Some Problems of Coding and Transmission of Information in the Control Systems of Animate Nature--collection of works), 1971, pp 3-98 (from RZh-Matematika, No 1, Jan 73, abstract No 1V873 by L. Savchenko)

Translation: The paper deals with the cybernetic aspects of theoretical biology involving the study of control processes in living systems.

Based on the assumption that life is a state of matter distinguished by high stability with regard to external disturbances, the authors note the peculiarities of the structure and functioning of control systems in animate nature. Cybernetic problems are formulated on the level of the biosphere, communities, populations, the organism, and the cell. On the level of the biosphere -- the layer adjacent to the earth's surface where all life takes place -- the area of cybernetics consists in determining the basic cycles of matter and flows of energy, and in discovering the controlling mechanisms of living organisms.

1/3

USSR

BELIKOVA, M. A., LYAPUNOV, A. A., O nekotorykh vopr. kodir. i peredachi inform. v upr. sistemakh zhivoy prirody, 1971, pp 3-98

In studying communities, an important part must be played by the construction of mathematical models of the communities, models of the formation of the biomass on the given territory, and models of the interaction -- feeding of some creatures on others, death and mineralization of the biomass, and so forth. The authors point out the inadequacy of information for constructing such models, and the necessity of a united program for organizing field stations to study communities.

With regard to problems on the level of populations -- groups of individuals occupying a certain connected territory -- among the types of mathematical models of populations the authors single out computer models which enable accounting for a much greater variety of circumstances than do analytical models.

With regard to controlling systems of the organism, the authors concentrate on problems of the various levels of the controlling system -- on the highest level, the genetic system, next the nervous system, then the endocrine system, and finally local control systems (control of heart activity, respiration, etc.).

2/3

- 79 -

USSR

BELIKOVA, M. A., LYAPUNOV, A. A., O nekotorykh vopr. kodir. i peredachi inform. v upr. sistemakh zhivoy prirody, 1971, pp 3-98

The work is "an attempt to summarize the cybernetic problems of biology in a first approximation".

3/3

USSR

BELIKOVA, M. A., LYAPUNOV, A. A.

"Cybernetic Problems in Biology"

O Nekotorykh Vopr. Kodir. i Peredachi Inform. v upr. Sistemakh zhivoy Prirody [Some Problems of Coding and Transmission of Information in the Control Systems of Animate Nature -- Collection of Works], Novosibirsk, 1971, pp 3-98 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V873 by L. Savchenko).

Translation: A cybernetic problem is presented from theoretical biology, related to the study of controlled processes in living systems.

Based on the fact that life is one state of matter differing in its high stability in relationship to external perturbations, the peculiarities of the structure and functioning of control systems of living things are noted. Cybernetic problems are formulated at the level of the biosphere, societies, populations, organisms and cells. At the level of the biosphere -- the layer adjacent to the surface of the earth in which all life occurs -- the cybernetic problem consists in determining the basic cycles of matter and flows of energy and determination of the control functions of living organisms.

In the study of properties, an important role must be played by the

1/2

USSR

BELIKOVA, M. A., LYAPUNOV, A. A., O Nekotorykh Vopr. Kodir. i Peredachi Inform. v upr. Sistemakh Zhivoy Prirody, Novosibirsk, 1971, pp 3-98.

construction of mathematical models of societies, models of the formation of the biomass over a given territory and models of interaction -- eating of certain substances by others, death and mineralization of the biomass, etc. The shortage of information for construction of such models and the necessity of a single program for organization of the work of studying substances are noted.

Studying the problem at the level of populations -- groups of individuals populating certain cohesive territories -- among types of mathematical models of populations the author selects machine models which allow consideration of much more varied combinations of situations than analytic models.

In studying control systems of an organism, the author distinguishes the problems at various levels of the control system -- the higher level, genetic system, then the nervous system, then the endocrine system and, finally, the local control system (control of cardiac activity, respiration, etc.).

The work is an "attempt to give a summary of the cybernetic problems of biology in the first approximation."

2/2

- 83 -

USSR

UDC: 8.74

BELIKOVA, M. A., LYAPUNOV, A. A., STAROVOYTOVA, E. P.

"Systems Approach to Mathematical Modeling of the Endocrine System and the Circulatory System"

V sb. Probl. kibernetiki (Problems of Cybernetics—collection of works), vyp. 25, Moscow, "Nauka", 1972, pp 205-215 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V589)

Translation: The paper presents a certain summing up of factual material and outlines mathematical models of the pyroidal and insular subsystems of the endocrine system. An approach to distribution of the blood in the organism and transformation of the blood composition in various organs is described. It is characteristic of these processes that they evolve on two levels. The upper level is the distribution of blood among the various organs, and the lower level is transformation of the blood composition in these organs.

1/1

- 67 -



1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--HEAVY PYRIDINE BASES AS CORROSION RETARDING AGENTS -U-  
AUTHOR--(02)-FALKOVSKEYA, L.M., BELIKOVA, M.S. **B**  
COUNTRY OF INFO--USSR  
SOURCE--KIEV, TEKHNLOGIYA I ORGANIZATSIYA PROIZVOODSTVA, NO 1, 1970, PP  
75-77  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--COKE, LOW CARBON STEEL, STEEL CORROSION, PYRIDINE, CORROSION  
INHIBITOR  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FNAME--1999/1341 STEP NO--UR/0418/70/000/001/0075/0077  
CIRC ACCESSION NO--AP0123299

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123299

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDY THE PROTECTIVE EFFECT OF HEAVY PYRIDINE BASES (TPO) ON THE CORROSION OF LOW CARBON STEEL IN ONE N SULFURIC ACID. EXPERIMENTAL DATA INDICATED A SUFFICIENTLY EFFECTIVE PROTECTIVE ACTION OF HEAVY PYRIDINE BASES WITH RESPECT TO CORROSION OF STEEL. THE CORROSION RETARDING EFFECT ACHIEVED BY ADDING VARIOUS CONCENTRATIONS OF HEAVY PYRIDINE BASES LIES WITHIN THE 61-100PERCENT LIMITS. HEAVY PYRIDINE BASES ARE INEXPENSIVE PRODUCTS OF THE BY PRODUCTS OF THE COKE INDUSTRY. THEY CAN BE USED FOR RETARDING CORROSION IN ACID MEDIA.

UNCLASSIFIED

1/2 038 UNCLASSIFIED PROCESSING DATE---04DEC70  
TITLE--ALLOYS FOR HARD FACING PARTS OF EARTH MOVING MACHINES -U-  
AUTHOR-(03)-BELIKOVA, N.A., GRINBERG, N.A., PRUZHANSKIY, L.YU.  
COUNTRY OF INFO--USSR  
SOURCE--METALLOVEDENIE I TERM. OBRABOT. METALLOV, 1970, (3), 37-38  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--HARD ALLOY, IRON ALLOY, CHROMIUM NICKEL ALLOY, NICKEL CHROMIUM  
ALLOY, WEAR RESISTANCE, EARTH HANDLING EQUIPMENT, BULLDOZER, BORON  
INTENSIFIED STEEL, ALLOY STEEL, IMPACT STRENGTH, NICKEL CONTAINING  
ALLOY, WELD FACING, METAL SURFACING, WEAR RESISTANT METAL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3005/091B STEP NO--UR/0129/70/000/003/0037/0038  
CIRC ACCESSION NO--AP0133007  
UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133007

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE CHEMICAL COMPOSITION AND MICROSTRUCTURE OF A NUMBER OF FE-CR-NI ALLOYS USED FOR THE HARD FACING OF EARTH MOVING MACHINERY ON THEIR WEAR RESISTANCE AND IMPACT STRENGTH BETWEEN MINUS 60 AND MINUS 27DEGREESC WAS STUDIED. IN GENERAL INCREASING THE NI CONTENT REDUCED THE COLD SHORTNESS THRESHOLD; HOWEVER, MORE THAN 5PERCENT OF NI ALSO REDUCED THE WEAR RESISTANCE OWING TO THE CORRESPONDING RISE IN AUSTENIT CONTENT. THE ADDITION OF B SHARPLY REDUCED THE IMPACT STRENGTH, INDEPENDENT OF THE STRUCTURAL CHARACTERISTICS.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--PREPARATION AND ATTEMPTED SEPARATION OF EXO AND  
ENDO,1,3,DIMETHYLBICYCLO,2.2.1,HEPTANES -U-  
AUTHOR-(04)-KOVALENKO, L.I., FURMAN, D.B., BELIKOVA, N.A., LIBERMAN, A.L.  
COUNTRY OF INFO--USSR  
SOURCE--NEFTEKHIMIYA 1970, 10(2), 161-4  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CYCLOALKANE HYDROCARBON, HEPTANE, KETONE, ALKYL RADICAL,  
ISOMER, THIOUREA, CHEMICAL SEPARATION, MOLECULAR STRUCTURE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3006/0906 STEP NO--UR/0204/70/010/002/0161/0164  
CIRC ACCESSION NO--AP0134635  
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70  
CIRC ACCESSION NO--AP0134635  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPS. WERE SYNTHESIZED  
FROM THE CORRESPONDING HEPTANONES BY TREATMENT WITH N SUB2 H SUB4 .H  
SUB2 O, DIETHYLENE GLYCOL, KOH, REFLUXING THE MIXT., AND DISTG. THE  
HYDROCARBON AND H SUB2 O FORMED. A MIXT. OF EXO AND  
ENDO,2,METHYLBICYCLO(2.2.1) HEPTANE WAS METHYLENATED. TO DECIDE WHETHER  
THE HIGHER OR LOWER BOILING COMPD. WAS EXO. THE LOW BOILING COMPS.  
OBTAINED HAD THE EXO CONFIGURATION. THE STEREO ISOMERS WERE SEPD. BY  
FRONTAL METHOD WITH THIOUREA. FACILITY: KHM. FAK., MOSK. GOS.  
UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.181.7.021.001.5:  
:539.4.014.13

MINASARYAN, A. A., Candidate of Technical Sciences, and  
BELIKOVA, R. V., Engineer

"Residual Stresses in Gasproof Panels"

Leningrad, Energomashinostroyeniye, No 12, Dec 72, pp 33-35

Abstract: The residual stresses in welded eight-pipe gasproof panels from finned pipes and in four-pipe gasproof panels welded according to the schema pipe-strip spacer were tensometrically investigated after welding and after thermal treatment in order to determine the expediency of thermal treatment. The distribution of residual stresses on surfaces of 12Kh1M1F steel panels is discussed by reference to diagrams. A comparison of stress distribution curves after thermal treatment and welding of eight-pipe panels from finned pipes shows that the residual stresses increased after thermal treatment but the uniformity of their distributions did not improve. A high cooling rate of the panels after tempering is inadmissible. The cooling with the furnace to 450°C and following cooling in air may cause the formation of

1/2

USSR

MINASARYAN, A. A. and BELIKOVA, R. V., Energomashinostroyeniye, No 12,  
Dec 72, pp 33-35

high residual stresses of thermal origin which, in addition to residual stresses after holding at temper temperature, will be even higher than the initial welding stresses. Three figures, two tables, nine bibliographic references.

2/2

- 100 -



USSR

UDC 535.373.3

BELIKOVA, T. P., SAVCHENKO, A. N., SVIRIDENKOV, E. A.

"Luminescence Kinetics of ZnS-Cu during a Pulse of Two-Photon Excitation"

Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya (News of the Academy of Sciences USSR, Physics Series), Vol 35, No 7, 1971 pp 1454-1457

Abstract: A ruby laser is used to excite ZnS-Cu crystals. Two-photon absorption ionizes the copper centers. Electrons are promoted from these centers into the conduction zone. Free electrons in the conduction zone are captured by traps, are liberated by heat, and radiate light when they recombine with ionized centers. The luminescence intensity, which should be related as the fourth power to the excitation intensity in terms of a bimolecular model, is found experimentally to be more complex. It is suggested that one-photon absorption of red light should be taken into account because 1) this type of absorption can neutralize the copper centers with electrons from the valence zone, and 2) one-photon

1/2

USSR ..

BELIKOVA, T. P. et al, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 7, 1971, pp 1454-1457

release of electrons from traps near the bottom of the conduction zone can result in luminescence.

One-photon processes were observed during two-photon excitation. Calculations of kinetic equations, taking these processes into account, agree well with experiment. Analysis of the one-photon processes made it possible to estimate the cross section of one-photon transitions of electrons from the valence zone to the ionized copper centers ( $1.6 \times 10^{-17} \text{cm}^2$ ). Theoretical and calculated curves for the intensity of luminescence as a function of the intensity of excitation are in good agreement.

The authors thank M. D. Galanin for encouragement and L. A. Pakhomycheva for assistance in the work. Orig. art. has 4 figs. and 3 refs.

2/2

- 119 -

1/2 053 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--LIGHT ABSORPTION BY RUBY IN THE PRE BREAKDOWN STATE -U-  
AUTHOR--(03) ~~BELIKOVA~~, T.P., SAVCHENKO, A.N., SVIRIDENKOV, E.A.  
COUNTRY OF INFO--USSR *B*  
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,  
NR 6, PP 1899-1903  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--LIGHT ABSORPTION, RUBY LASER, RUBY, SHOCK WAVE  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1997/1719 STEP NO--UR/0056/70/058/006/1899/1903  
CIRC ACCESSION NO--AP0120431  
UNCLASSIFIED

2/2 053

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120431

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INTENSE LIGHT FROM A POWERFUL RUBY LASER IN FOUND TO INDUCE IN THE RUBY AN ABSORPTION INCREASE, PRECEDING DESTRUCTION. THE KINETICS OF THIS INCREASE UNDER THE ACTION OF THE PULSE IS INVESTIGATED. ESTIMATES ARE MADE OF THE DEPENDENCE OF THE SHOCK WAVE PRESSURE ON THE ABSORPTION AND INTENSITY OF THE INCIDENT LIGHT. FACILITY: FIZICHESKIY INSTITUT IM. P.N. LEBEDEVA AN SSSR.

UNCLASSIFIED

BELIKOVA, Ye. V.

URS 57517  
151107722

- 18 -

Accordingly, acceleration is among the factors capable of making labile the membranes of subcellular structures. The labilization of lysosomal membranes is usually accompanied by the setting free of enzymes from

It is known that transverse accelerations cause functional, morphological and biochemical shifts in the animal body. There is a definite correlation between structural, isoproteins and biochemical changes in the cells of animals subjected to high accelerations (M. I. Razumov and I. V. Puzanov). Animals exhibit a decrease in oxygen concentration in the tissues and this results in a decrease in the level of cell respiration with manifestations of hypoxia (A. S. Berez, et al., 1963). A shortage of energy resources can cause an impairment in functioning of cell membranes. Data published by Hoorek and Broodsky show that during liver hypoxia there is a disturbance of oxidative phosphorylation and a decrease in the  $P_0$  level in the mitochondria. It is also known that an oxygen shortage in the tissues causes damage to the membranes of lysosomes and mitochondria with an impairment in their permeability (De Duve, 1959, 1960; Frederix, Chevremont-Cohatru).

Abstract: Exposure of rats to transverse accelerations of 25 g, separated for six minutes, resulted in a 20% decrease in the DNA content in their spleens and caused no changes in liver DNA content. The exposure brought about no variations in DNAase activity in tissue homogenates or their supernatants. However, the total activity of the free and bound enzyme in the liver measured in the homogenate after treatment with Trilon X-100 was 17% lower in the experimental animals than in the controls. The physicochemical properties of DNA (molecular weight and secondary structure) from tissues of animals which were exposed to accelerations remained unaltered in comparison with normal levels.

[Article by G. S. Komolova, V. E. Mokevova, Ye. V. Belikova, I. E. Yezhovskaya and I. A. Yezhovskaya, Sovetskaya Biologiya, Moscow, 1972, Vol. 6, No. 5, September-October 1972, pp. 16-17, submitted for publication 2 August 1972]

DNA CATABOLISM IN THE ORGANS OF RATS UNDER THE INFLUENCE OF TRANSVERSE DIRECTED ACCELERATIONS

UDC 612.356.1.014.67:531.117

1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--EPIDEMIOLOGY OF INTESTINAL COLI INFECTION IN YOUNG CHILDREN -U-  
AUTHOR--(05)-BELIKOVAALDAKOVA, V.D., TABOLIN, V.A., BYCHENKO, V.D.,  
DESHCHEKINA, M.F., KARASEVA, K.G.  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR  
6, PP 9-14  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--PEDIATRICS, INFECTIOUS DISEASE, DIGESTIVE SYSTEM DISEASE,  
SMALL INTESTINE, BACTERIAL DISEASE, EPIDEMIOLOGY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3001/0358 STEP NO--UR/0016/70/000/006/0009/0014  
CIRC ACCESSION NO--AP0126114  
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0126114

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MATERIAL OBTAINED DEMONSTRATED THAT IN CHILDREN UNDER TWO YEARS OF AGE INTESTINAL COLI INFECTION CONSTITUTED ONLY 5-6PERCENT OF THE WHOLE SUM TOTAL OF ACUTE INTESTINAL DISEASES. CLINICALLY MANIFEST FORMS USUALLY OCCURRED IN ENFEEBLED CHILDREN; IN HEALTHY CHILDREN THIS INFECTION WAS MOSTLY EXPRESSED IN THE CARRIER STATE. TO ASCERTAIN THE ROLE OF THE DOSE OF THE CAUSATIVE AGENT IN THE EPIDEMIOLOGY OF INTESTINAL COLI INFECTION THE AUTHORS ANALYSED COMPARATIVE BY THE EPIDEMIOLOGICAL VALUE OF VARIOUS WAYS OF TRANSMISSION OF THE INFECTIVE AGENT. FOOD FACTOR WHICH PROVIDED PENETRATION OF A GREATER DOSE OF THE MICROBE IN TO THE ORGANISM PROVED TO PLAY A LEADING ROLE. IN CONCLUSION IT WAS SHOWN THAT OF THE CARDINAL IMPORTANCE IN THE PROPHYLAXIS OF INTESTINAL COLI INFECTION SHOULD BE THE MAINTENANCE OF HIGH SANITATION STANDARD IN CHILDREN'S COLLECTIVE BODIES, PARTICULARLY IN THE GROUPS OF ENFEEBLED CHILDREN.

FACILITY: I. MOSKOVSKIY MEDITSINSKIY INSTITUT IM. SECHENOVA.

FACILITY: II. MOSKOVSKIY MEDITSINSKIY INSTITUT, DETSKAYA KLINICHESKAYA BOL'NITSA IM. FILATOVA.

UNCLASSIFIED

USSR

UDC: 621.762.5(088.8)

MUKHA, I. M., DOVBISHCHUK, M. A., KAL'NENKO, B. I., BELILOVETS, A. D.

"Method of Sintering of Metal Ceramic Products"

USSR Author's Certificate Number 353793, Filed 10/02/70, Published 30/10/72  
(Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract  
No 8G403).

Translation: A method is suggested for sintering metal ceramic products, including heating in a controlled gas atmosphere. In order to reduce the sintering cycle and increase product quality, they are heated by a glowing gas discharge.

1/1

- 37 -



USSR

MUKHA, I. M., DOVBISHCHUK, M. N., BELILOVETS, A. D., VYSHNEVSKIY, V. S., Kiev

"Strength of Welded Joints of VK Hard Alloys as a Function of the Thickness of the Interstitial Layer and the Technological Process of Applying It"

Kishinev, Elektronnaya obrabotka materialov, No 5 (47), 1972, pp 26-30

Abstract: A study was made of the technological procedures for applying Ni and Co interstitial layers for diffusion welding of VK type hard alloys in glow discharge and also the effect of the thickness of the interstitial layers on the strength of the welded joint. Interstitial layers made of powdered Ni and Co can be used for surface ground parts made of hard alloys. Interstitial layers in the form of thin films obtained by thermal evaporation in a vacuum can be used for welding parts of complex surface curvature. The optimal film thickness is 4,000 to 8,000 Å. The variation in strength of the welded joints of VK6-VK16 hard alloys is plotted as a function of the thickness of the Co and Ni interstitial layers from 2,000 to 40,000 Å.

1/1

USSR

UDC 615.472:616.12-008.1-78

BELILOVSKIY, M. A., BERGER, I. I., FROLKIN, O. A., STETSIN, A. A., TROFIMOVA, G. N., and GUSMAN, V. Ye., All Union Scientific Research Institute for Medical Instrumentation, Moscow

"The Biopulse-2, an Apparatus for Auxiliary Blood Circulation"

Moscow, Meditsinskaya Tekhnika, No 4, 1971, pp 14-19

Abstract: The Biopulse-2 is an electromagnetic pump with bioelectric control designed to provide auxiliary blood circulation in different kinds of cardiac insufficiency in order to relieve the heart and increase the venous blood flow. The apparatus consists of a cardiac biopotential amplifier, control unit, power amplifier, motor with a pump, and power supply. The biopotential amplifier collects and processes biological information. The control unit regulates the pulsating current. The power amplifier boosts the pulsating current of low-power electrical energy while the electromagnetic motor with a diaphragm pump head transforms the electrical energy into mechanical energy to move the blood.

1/1

1/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--INDICATORS USABLE FOR MERCURIMETRIC TITRATION -U-  
AUTHOR--BELILOVSKIY, YA.YE.  
COUNTRY OF INFO--USSR  
SOURCE--FARMATSIYA (MOSCOW) 1970, 19(1), 80-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--CHEMICAL INDICATOR, TITRATION, MERCURY, NITRATE, SODIUM  
CHLORIDE, POTASSIUM CHLORIDE, CALCIUM CHLORIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1996/0293 STEP NO--UR/0466/70/019/001/0080/0085  
CIRC ACCESSION NO--AP0117545  
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117545

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF MERCURIMETRIC DETNS. OF CL PRIME NEGATIVE, AND I PRIME NEGATIVE IN HALIDES OF NA, K, AND CA AND SOME DRUGS USING DIPHENYLCARBAZIDE, DIPHENYLCARBAZONE, AND NA NITROPRUSSIDE AS INDICATORS AT DIFFERENT PH ARE GIVEN. THE BEST RESUTS WERE OBTAINED IF THE TITRN. WAS CARRIED OUT WITH HG(NO SUB3) SUB2 AT PH 1.5-2.5 USING DIPHENYLCARBAZONE AS INDICATOR. HIGH SENSITIVITY OF THIS TITRN. MADE POSSIBLE QUANT. DETN. OF HCL ADDED AS A STABILIZER TO SOLNS. OF INJECTIONS. DIL. SOLNS. OF HALIDES WERE TITRATED WITH HG(NO SUB3) SUB2 TILL STABLE TURBIDITY WAS APPARENT. THEN DIPHENYLCARBAZONE WAS ADDED AND THE SOLN. WAS TITRATED TO BLUE COLOR. FACILITY: DONTR. ANAL. LAB., BRYANSK. APTECH. UPR., BRYANSK, USSR.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--CORROSION RESISTANCE OF PURE AUSTENITIC STEEL OKH17N16M3T -U-  
AUTHOR--(04)-BELINKIY, A.L., KRISTAL, M.M., ZHELTOVA, G.A., ADUGINA, N.A.  
COUNTRY OF INFO--USSR **B**  
SOURCE--ZASHCH. METAL. 1970, 6(1), 37-9  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--CORROSION RESISTANT STAINLESS STEEL, AUSTENITIC STEEL, ALLOY  
DESIGNATION, INTERGRANULAR CORROSION, CORROSION CRACKING, WELDING  
ELECTRODE, WELD JOINT, NITRIC ACID, UREA, OXIDATION, STEEL  
QUENCHING/(U)OKH23N28M3D3T STAINLESS STEEL, (U)00OKH17N14M2 STAINLESS  
STEEL, (U)KH17N13M3T STAINLESS STEEL, (U)OKH17N16M3T STAINLESS STEEL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1990/1314 STEP NO--UR/0365/70/006/001/0037/0039  
CIRC ACCESSION NO--AP0109398  
UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0109398

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PURE AUSTENITIC STEEL OKH17N16M3T CONTG. SMALLER THAN 0.08PERCENTC AND ITS WELDED JOINTS WERE MORE RESISTANT IN SOME CORROSIVE MEDIA (UREA, HNO SUB3, ETC.) THAN STEEL KH17N13M3T TO GENERAL POINT, CREVICE, AND STRUCTURALLY SELECTIVE CORROSION. IN HIGHLY OXIDIZING MEDIA, STEEL OKH17N16M3T IS SUBJECT TO INTERCRYST. CORROSION; THEREFORE, EQUIPMENT MADE OF THIS STEEL FOR USE IN THESE MEDIA SHOULD BE QUENCHED AT 1100DEGREES AFTER MANUF. HIGH CORROSION RESISTANCE OF STEEL OKH17N16M3T WELDED JOINTS CAN BE OBTAINED BY USING, IN OXIDIZING MEDIA, THE OZL-20 AND KHL-1 ELECTRODE IN THE CASE OF ELEC. ARC WELDING, WHILE IN THE CASE OF AR ARC WELDING USE IS MADE OF THE WELDING WIRE 00OKH17N14M2 OR OKH23N28M3D3T; IN REDUCING MEDIA KHL-1 ELECTRODE OR THE WIRE OKH23N28M3D3T ARE USED. QUENCHING OF WELDED JOINTS IMPROVES THEIR RESISTANCE TO CORROSION CRACKING. FACILITY: VSES. NAUCH.-ISSLED. INST. KHIM, MASHINOSTR., MOSCOW, USSR.

UNCLASSIFIED

Heat Treatment

USSR

UDC 621.785:620.192.46:669.14.018.8

ZHELTOVA, G. A., BELINKIY, A. L., KRISTAL', M. M., ADUGINA, N. A., All-Union Scientific Research and Design Institute of Chemical Machine Building

"Effect of Heat Treatment on the Tendency of 000Kh16N15M3 Steel to Inter-crystalline Corrosion"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 4, Apr 73, pp 12-15

Abstract: Production of 000Kh16N15M3 steel in the form of chemical containers with 0.03% C (max) has been mastered and tested. Samples for metallographic studies and corrosion tests were quenched from 1100 and 1200°C with 30-minute soaks and repeated heating to 550-950°C every 50°C with 10 and 30-minute, and 1-, 5-, 10-, 50-, and 100-hour soaks. Nitric acid (65%) was used in the corrosion tests. It was found that heating at 550-950°C causes precipitation of carbides and chi-phase in 000Kh16N15M3 steel and precipitation of carbides and the sigma- and chi-phases in OKj17N16M3T steel. With increased quenching temperature the regions of carbide and intermetallic precipitation for 000Kh16N15M3 steel correspond to the long soaking times. Inter-crystalline corrosion was detected only after lengthy (not less than 10 hours) thermal action for 000Kh16N15M3 steel causing precipitation of a continuous  
1/2

USSR

ZHELTOVA, G. A., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 4, Apr 73, pp 12-15

network of carbides and chi-phase along the austenite grain boundaries, while for steel OKh17N16M3T this form of corrosion was observed after only four hours. The intercrystalline corrosion tendency for the investigated steels develops after a short soak at 700-850°C. The tendency of OKh17N16M3T steel and its weld joints is greater than for OOKh16N15M3 steel and knife corrosion is absent in OOKh16N15M3 steel when tested in nitric acid and in the medium of a synthesis column and the mixer for carbamide production. Four figures, 2 tables, 5 bibliographic references.

2/2

- 21 -



1/2 024 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--EARLY MORPHOLOGICAL CHANGES IN THE LIVER FOLLOWING ITS COMPLETE  
ISOLATION FROM GENERAL CIRCULATION -U-  
AUTHOR--(05)--BELINSKAYA, A.M., PLIKH, M.B., GONCHAROV, A.L., GORYACHEY,  
S.P., DOROKHOVA, L.P.  
COUNTRY OF INFO--USSR *B*  
SOURCE--ARKH. PATOL. 1970, 32(2), 70-3  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--LIVER, BLOOD CIRCULATION, INHIBITION, HISTOCHEMISTRY,  
GLYCOGEN, RNA, NECROSIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1996/0579 STEP NO--UR/9056/70/032/002/0070/0073  
CIRC ACCESSION NO--AP0117807  
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117807

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NO PATHOMORPHOL. AND HISTOCHEM. CHANGES WERE OBSD. IN DOG LIVERS 20 MIN SUBSEQUENT TO THEIR ISOLATION FROM GENERAL CIRCULATION. AFTER 40 MIN, THE FUNCTION OF THE ORGAN WAS DIMINISHED AND DYSTROPHIC CHANGES WERE FOUND IN PARENCHYMA. THE CONTENT OF GLYCOGEN AND RNA IN CELLS WAS REDUCED. AFTER 60 MIN, NECROBIOTIC CHANGES OF PARENCHYMA WERE OBSD. AS WELL AS DECREASE OF GLYCOGEN AND NUCLEIC ACIDS CONTENT OF HEPATOCYTES. FACILITY: KAZ. INST. KLIN. EKSP. KHIR., ALMA-ATA. USSR.

UNCLASSIFIED

USSR

UDC 661.183.123

NOVIKOV, B. G., BELINSKAYA, F. A., and MATEROVA, YE. A.

"Structure and Ion Exchange Properties of Crystalline Antimonate Cation Exchanger. Exchange of Monovalent Cations"

Leningrad, Vestnik Leningradskogo Universiteta, Seriya Fizika i Khimiya, No 1, Feb 71, pp 29-35

Abstract: The article describes results of a study of the exchange of hydrogen ions for some monovalent cations on the new crystalline antimonate cation exchanger, as well as considering the structure of the ion exchanger. A structural model of the cation exchanger is shown. The cation exchange was studied under static conditions. For the characteristic of the active groups potentiometric titration of the ion exchanger was carried out with 0.1 N solutions of NaOH, KOH, LiOH, CsOH and  $(CH_3)_4NOH$  against a 1 N background of the corresponding chlorides. For a quantitative description of the exchange of monovalent cations on the cation exchanger a study was made of ion exchange equilibrium in the systems NaCl-HCl, KCl-HCl, LiCl-HCl and  $AgNO_3-HNO_3$  at

1/2

USSR

NOVIKOV, B. G., et al., Vestnik Leningradskogo Universiteta, Seriya Fizika i Khimiya, No 1, Feb 71, pp 29-35

20 and 80° C at constant 0.1 N ionic strength of solution. Selectivity coefficients were calculated on the basis of the resultant data. It was found that the relative affinity of the antimonate cation exchanger for cations decreases in the order  $Ag^+ > Na^+ > H^+ > K^+ > Li^+$ . Further study of the antimonate cation exchanger is promising because of its unique ion exchange properties, viz. sharply pronounced exchange selectivity in conjunction with chemical stability. Possible practical applications of the cation exchanger include its use for the quantitative extraction of silver ions from mixed solutions, as well as for the separation of alkali metal ions. A subsequent article will consider the exchange of bivalent cations on the antimonate cation exchanger.

The authors thank V. N. MARKIN for useful consultation in the construction of the structural model of the cation exchanger.

2/2

- 39 -

USSR

UDC 661.183.123

NOVIKOV, B. G., BELINSKAYA, F. A., and MATEROVA, YE. A.

"Exchange of Bivalent Cations on Crystalline Antimonate Cation Exchanger"

Leningrad, Vestnik Leningradskogo Universiteta, Seriya Fizika i Khimiya, No 1, Feb 71, pp 35-42

Abstract: The article describes results of a study of the exchange of hydrogen ions for bivalent cations on the antimonate cation exchanger in the systems  $\text{MgCl}_2\text{--HCl}$ ,  $\text{CaCl}_2\text{--HCl}$ ,  $\text{SrCl}_2\text{--HCl}$ ,  $\text{BaCl}_2\text{--HCl}$ ,  $\text{NiCl}_2\text{--HCl}$  and  $\text{CdCl}_2\text{--HCl}$ . The ion exchange experiments were carried out under static conditions by the method of individual samples at 20 and 80° C. Selectivity coefficients were calculated on the basis of ion-exchange equilibrium data for the systems  $\text{SrCl}_2\text{--HCl}$ ,  $\text{CaCl}_2\text{--HCl}$ ,  $\text{CdCl}_2\text{--HCl}$  and  $\text{BaCl}_2\text{--HCl}$ . The dependence of the selectivity coefficients on the ion composition of the cation exchanger was found, making it possible to determine some thermodynamic functions of the  $\text{M}^{2+} \rightarrow \text{H}^+$  exchange. It was found that the ions rank as follows in their

1/2

USSR

NOVIKOV, B. G., et al., Vestnik Leningradskogo Universiteta, Seriya Fizika i Khimiya, No 1, Feb 71, pp 35-42

affinity for the cation exchanger:  $\text{Cd}^{2+} > \text{Sr}^{2+} > \text{Ba}^{2+} > \text{Ca}^{2+} \gg \text{Mg}^{2+}$ ,  $\text{Ni}^{2+}$ . It is suggested that there are at least two factors determining ion exchange selectivity: the energy of hydration of the counterions and their polarizing capacity. The preferential influence of these factors on the ion exchange process is due in turn to structural peculiarities of the antimonate cation exchanger and the chemical nature of ionogenic groups. On the basis of the sharply pronounced selectivity of exchange of bivalent ions the cation exchanger is recommended for the extraction of  $\text{Cd}^{2+}$ ,  $\text{Sr}^{2+}$  and  $\text{Ba}^{2+}$  ions from acid solutions, as well as for separation of the ions  $\text{Cd}^{2+}$  ( $\text{Sr}^{2+}$ ,  $\text{Ba}^{2+}$ ) —  $\text{Ca}^{2+}$  ( $\text{Mg}^{2+}$ ,  $\text{Ni}^{2+}$ ) and  $\text{Ca}^{2+}$  —  $\text{Mg}^{2+}$  ( $\text{Ni}^{2+}$ ).

2/2

- 37 -

AT 9042251

CHEMICAL ABST.

9-69 UR 3660

54012q Ion exchange on decationized (hydrogen) forms of synthetic zeolites. Belinskaya, E. A.; Zhdanov, S. P.; Matcroya, E. A.; Shubaeva, M. A. (USSR). *Teor. Ionnoy Obmena Khromatogr., Tr. Vses. Nauch.-Tekh. Konf.* 1965 (Pub. 1968), 37-44 (Russ). Edited by Rachinskii, V. V. Izd. "Nauka": Moscow, USSR. Na<sup>+</sup>-H<sup>+</sup> interchange in A-type zeolites (I), X-type zeolites (II), and orionite (III) was studied by the titrn. curves method. The exchange of Na<sup>+</sup> for H<sup>+</sup> was taking place at pH 7 in I, at pH 5 in II, and at pH 3 in III, and was reversible in III, whereas in I and II it was accompanied by irreversible changes of the crystal lattice. S. Marciukiewicz

AB

22  
3  
1  
28

1944 0615

7

USSR

UDC 669.245'26'293'27'28:620.18:620.17

BELINSKAYA, L. A., BRAUN, M. P., IONKINA, Ye. M., LEBEDEV, K. P., and  
KHIL'CHEVSKAYA, T. V.

"Structure, Phase Composition, and Certain Properties of Cast Complex Nickel-Base Alloys With Niobium"

Metallofizika. Resp. mezhved. sb. (The Physics of Metals. Republic Inter-departmental Collection of Works), 1971, vyp. 33, pp 102-107 (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 11791 by authors)

Translation of Abstract: A study was made of structural changes and certain properties of Ni-Cr-base alloys with a large Nb content (7.5-8%) when alloyed with tungsten (3%) and molybdenum (5.10%). The alloys were smelted in open induction furnaces, and specimens were made according to smelted models. Phase composition was studied after isolation of precipitates in specially selected electrolytes. The investigation of microstructure was made on as-cast specimens after heat treatment consisting in hardening from 1200° with subsequent tempering at 900° for 16 hours. Four illustrations. Three tables. Bibliography with seven titles.

1/1



BELINSKAYA, L. G.

JPRS 55919  
8 May 1972

UDC 534.12-8

ULTRASONIC SPECTROSCOPY OF LIQUIDS

[Article by L.G. Belinskaya and L.G. Pashchenko. Chair of Physics; Moscow, Izvestiya Vsesoyuznogo Spetsializirovannogo Nauchnogo Tsentra Akademi Nauk SSSR, No 1, 1972, signed to press 18 October 1971, pp 193-200]

The construction of a general theory of the liquid state of matter is a most important problem of modern physics. Up to this time there has been no such theory, and for its creation the accumulation of diverse experimental information concerning the structure of liquids is necessary, which, in turn, is no less urgent also for the solution of many practical problems.

Various physical methods of investigating these media exist (optical spectroscopy, NMR [nuclear magnetic resonance], EPR [electron paramagnetic resonance], and others), among which ultrasonic methods occupy a definite place [reference 5]. The basic information quantities in this case are the speed of the propagation of acoustic waves (sound waves) and their absorption  $\alpha$ .

In performing an investigation of the basic acoustic parameters in the region of ultrasonic and hypersonic frequencies ( $10^3$ -- $10^{10}$  hertz), i.e., operating on long waves comparable with

- 1 -

[I - USSR - L]

USSR

UDC 547.586 + 547.539

MILEVSKAYA, V. B., BELINSKAYA, R. V., and YAGUPOL'SKIY, L. M., Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

"Reaction of Homophtalic Acid With Phosphorus Pentachloride"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 9, No 10, Oct 73, pp 2145-2149

Abstract: Reaction of homophtalic acid with phosphorus pentachloride yields a mixture of  $\alpha,\alpha$ -dichlorohomophtalic acid dichloride (I), 3-chloroisocoumarin (II), and 3,3,4,4-tetrachloro-3,4-dihydroisocoumarin (III). The latter can also be obtained from 3-chloroisocoumarin. Reacting  $PCl_5$  with III leads to the formation of 1,1,3,3,4,4-hexachloroisochromane. The dichloride I reacted with aniline, 4-chloroaniline and 2,4-dichloroaniline in benzene solution gives quantitative yields of respective dianilides.

1/1

Acc. Nr:

AP0044612

**BELINSKAYA** Code: **TUR 77**

PRIMARY SOURCE: Klinicheskaya Meditsina, 1970, Vol 48,  
Nr / , pp 84-89

INTRAVENOUS AND INTRASPLENIC RADIOPORTOGRAPHY  
IN PATIENTS WITH PORTAL HYPERTENSION

M. D. Patsiora, T. F. Belinskaya, Yu. A. Yershov

Summary

Intravenous radioportography (determination of the cardiportal time) was carried out in 78 patients with portal hypertension. The investigations have shown that intravenous radioportography in combination with other techniques is perspective in the diagnosis of portal hypertension. However, it not always make it possible to evaluate the form of portal hypertension, inasmuch as changes of the cardiportal time mainly depend on the degree of obstruction of the portal system and the development of collateral circulation.

Intrasplenic radioportography was done in 16 patients with renal hypertension. The latter technique is perspective in the diagnosis of portal hypertension, as well as in the evaluation of features specific to collateral routs of circulation. Intrasplenic radioportography in combination with other techniques should also be utilized for the recognition of the severity of liver affection in patients suffering from portal hypertension.

1/1

REEL / FRAME  
19771289

02 72h